

WHAT IS CLAIMED IS:

1. A binary refrigeration unit comprising:

a refrigerant condensation section of a low-

5 temperature side refrigerant circuit, and a refrigerant  
evaporation section of a high-temperature side refrigerant  
circuit disposed side by side with the refrigerant  
condensation section of the low-temperature side refrigerant  
circuit, the refrigerant condensation section of the low-  
10 temperature side refrigerant circuit being cooled by cold  
generated at the refrigerant evaporation section of the high-  
temperature side refrigerant circuit to condense a  
refrigerant of the low-temperature side refrigerant circuit  
at the refrigerant condensation section, wherein:

15 a refrigerant tank is connected to a low-pressure  
side of the high-temperature side refrigerant circuit through  
a connecting pipe equipped with pressure reduction means.

2. The binary refrigeration unit according to claim

20 1,

wherein a sum of an internal volume of the  
refrigerant tank and an internal volume of a duct from the  
pressure reduction means to the refrigerant tank is in a  
range of 30% to 75% of the entire high-temperature side  
25 refrigerant circuit.

3. A binary refrigeration unit comprising:

a refrigerant condensation section of a low-temperature side refrigerant circuit, and a refrigerant evaporation section of a high-temperature side refrigerant circuit disposed side by side with the refrigerant

5 condensation section of the low-temperature side refrigerant circuit, the refrigerant condensation section of the low-temperature side refrigerant circuit being cooled by cold generated at the refrigerant evaporation section of the high-temperature side refrigerant circuit to condense a  
10 refrigerant of the low-temperature side refrigerant circuit at the refrigerant condensation section, wherein:

a refrigerant tank is connected to a low-pressure side of the high-temperature side refrigerant circuit through a connecting pipe equipped with pressure reduction means; and  
15 a high-pressure side of the high-temperature side refrigerant circuit and the refrigerant tank are connected to each other through a bypass pipe equipped with opening/closing means.

4. The binary refrigeration unit according to claim  
20 3, further comprising:

control means for opening the opening/closing means of the bypass pipe at the time of starting a compressor disposed in the high-temperature side refrigerant circuit, and for closing the opening/closing means after passage of  
25 predetermined time or detection of a preset value of a physical amount.

5. The binary refrigeration unit according to claim 3 or 4, further comprising:

control means for opening the opening/closing means of the bypass pipe at the time of stopping the compressor disposed in the high-temperature side refrigerant circuit, and for closing the opening/closing means after passage of predetermined time from a start of the compressor or detection of a preset value of a physical amount.

6. A binary refrigeration unit in which a refrigerant condensation section of a low-temperature side refrigerant circuit and a refrigerant evaporation section of a high-temperature side refrigerant circuit housed in a case are disposed side by side; and the refrigerant condensation section of the low-temperature side refrigerant circuit is cooled by cold generated at the refrigerant evaporation section of the high-temperature side refrigerant circuit to condense a refrigerant of the low-temperature side refrigerant circuit at the refrigerant condensation section,

the binary refrigeration unit comprising:

a high-temperature side refrigerant tank connected to a low-pressure side of the high-temperature side refrigerant circuit through pressure reduction means; and

a low-temperature side refrigerant tank connected to a low-pressure side of the low-temperature side refrigerant circuit through pressure reduction means,

wherein one refrigerant tank is installed in the

case; and the other refrigerant tank is attached to a backside of the case.

7. A binary refrigeration unit in which a  
5 refrigerant condensation section of a low-temperature side  
refrigerant circuit and a refrigerant evaporation section of  
a high-temperature side refrigerant circuit housed in a case  
are disposed side by side, and the refrigerant condensation  
section of the low-temperature side refrigerant circuit is  
10 cooled by cold generated at the refrigerant evaporation  
section of the high-temperature side refrigerant circuit to  
condense a refrigerant of the low-temperature side  
refrigerant circuit at the refrigerant condensation section,

the binary refrigeration unit comprising:

15 a high-temperature side refrigerant tank connected  
to a low-pressure side of the high-temperature side  
refrigerant circuit through pressure reduction means; and

a low-temperature side refrigerant tank connected to  
a low-pressure side of the low-temperature side refrigerant  
20 circuit through pressure reduction means,

wherein one refrigerant tank is installed in the  
case; and the other refrigerant tank is mounted on a tank  
mounting member rotatably mounted on a backside of the case  
to be rotatably attached to the backside of the case.

25 8. The binary refrigeration unit according to claim

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wherein a connecting pipe extended from the low-pressure side of the high-temperature side refrigerant circuit or the low-temperature side refrigerant circuit through a back plate of the case is connected through a loop  
5 to the refrigerant tank attached to the backside of the case.

9. The binary refrigeration unit according to any one of claims 6 to 8,

10 wherein the refrigerant tank of the high-temperature side or the low-temperature side attached to the backside of the case is divided into plural portions.

10. The binary refrigeration unit according to any one of claims 6 to 9,

15 wherein the low-temperature side refrigerant tank is installed in the case; and the high-temperature side refrigerant tank is attached to the backside of the case.

20 11. The binary refrigeration unit according to any one of claims 6 to 10,

wherein a wall abutting member whose rear end is positioned in the rear of the refrigerant tank attached to the backside of the case is attached to the backside of the case.

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